



# Go Nuke!

A North American Young Generation in Nuclear Newsletter

Spring 2012

## Presidents Corner-

Duncan Robinson, NA-YGN President

At this time last year, it was my distinct honor to address the NA-YGN membership as the incoming president of NA-YGN at our annual conference. I recall outlining many of the reasons why this past year would be a challenging one for us as an organization. Despite the many obstacles we have overcome in the past twelve months, right now there is great reason to be joyful. We are witnessing some truly exciting milestones for nuclear science and technology in North America.



Recently, the membership approved a ballot measure to adopt a new Vision statement for the organization to set the tone for our new five year Strategic Plan. That vision statement is:

*Developing leaders to energize the future of nuclear.*

These past few months have given us great reason to feel energized.

Combined Operating Licenses have now been approved for the construction and operation of new nuclear units at the V.C. Summer and A.W. Vogtle sites in South Carolina and Georgia respectively. This has been a long time coming and marks a significant achievement borne of countless hours of hard work by engineers, regulators, manufacturers, policymakers, executives, and many more who believed in the promise of new nuclear build in the United States. Our generation can be excited to anticipate the start up of new nuclear reactors in the US in our lifetime, something that once seemed a far off wish. I encourage all our members to read the recent blog posts at [www.cleanenergyinsight.org](http://www.cleanenergyinsight.org), including a story from one of our members working for SCANA.

This is not the only thing we have to celebrate. NA-YGN has completed another accomplished year. End of year metrics for 2011 are now available. In 2011, NA-YGN members contributed 58,519 hours to professional development and networking. Another 29,797 hours were invested in public information and community service. Most notably was a whopping increase of 4459 more hours than in 2010 for public information, reflecting the commitment of our members to engage with the public post-Fukushima. Overall, this equates to 88,315 hours of time spent in 2011 by NA-YGN members on the promotion of nuclear science and technology and the young professionals working in its varied fields! That is a solid increase of nearly 5% from 2010. I want to thank all our members for their hard work.

I also want to especially thank four people: Christine Csizmadia, Bobby Ashworth, Jan Garcia, and Natalie Sachar. These four members were selected for Core positions in our most recent election. Their willingness to serve shows that this organization will continue to thrive as its leaders develop and move on. They will be taking over for Liz McAndrew-Benavides, Erin West, Adam Strange, and Chris Waugh who have all been tireless supporters of NA-YGN and have given so much to ensure the success of the organization.

We have much to be proud of. I encourage all our members to continue to volunteer your time and energy to improve yourselves, your employers, this organization, and this industry. We have a truly bright future ahead.

## Westinghouse volunteers present awards to both national and local winners of the NA-YGN drawing contest.

Jennifer Smith- Westinghouse

Westinghouse volunteers presented awards to both national and local winners of the NA-YGN drawing contest. Prizes were presented to students at St. Teresa of Avila, Saint Alexis, Myrtle Elementary and all elementary schools in the Pittsburgh area. Students, teachers, principals, and parents attended the prize ceremonies.



Giovanni V. (Myrtle Ave Elementary) – National 1<sup>st</sup> prize winner pictured with Westinghouse volunteer and teachers



2<sup>nd</sup> Place local winner at St. Alexis- Madi A.



2<sup>nd</sup> (Olivia W.) and 3<sup>rd</sup> (Matthew M.) place national winners - students from St. Teresa of Avila with their parents

Students from St. Teresa of Avila nominated in the top 10 drawings submitted to nationals by Westinghouse. Standing with Westinghouse volunteers.



## Why you should attend the 2012 IYNC

Patrick Mason

It is that time of the year again— time for the annual NA-YGN Professional Development Conference. This year's conference is the **Charlotte 2012 IYNC**. This conference is different than the past, because we are joining in with our international peers, to learn and network.

The IYNC will feature a host of activities from both members of IYNC and NAYGN. The conference will feature **Technical Paper Presentations, NAYGN Professional Development Sessions, IYNC Workshops, and tours** over the course of 4 days. Each day will also feature a large Plenary Session, paneled by people from both inside and outside of the industry.

The Workshops will be geared more toward participant interaction, while the technical tracks will be primarily presentation based, with the professional development sessions falling somewhere in between. The technical talks are set to run the first few days of the conference followed by the workshops later in the week. Professional Development sessions will run the full length of the conference. Each day will feature many options to choose from in terms of where you want to go and what you want to do so make sure to get your schedule early.

The Technical Track will feature young professionals presenting papers in a variety of topics to include; Plant design, construction, operation, maintenance & decommissioning, Nuclear fuel cycle & waste management, Nuclear politics, economics & human resources, Nuclear safety, radiation protection and shielding, Advanced nuclear systems, Radiation science, medical applications & non base-load nuclear applications, Reactor physics, Thermal hydraulics & fluids, Materials science & technology, and Young generation unique best practices.

The optional tours will be held on the last day of the conference. There are a total of six different optional tours are offered which can be selected on the registration form. Each tour will last the full day with lunch included.



The Charlotte IYNC conference is hosting 18 workshops, each with its own theme and goal. When attending this year's conference, you will have the option to join and learn from many of these workshops.

- Workshop 1: BRICS Nuclear Energy Industry-  
Provides insight into the current status and the scope for expansion of the nuclear industry in the BRICS countries (Brazil, Russia, India, China and South Africa).
- Workshop 2: Benchmarks: Evaluating Our Nuclear Heritage to Validate Our Nuclear Future -  
Promotes the understanding of how to become engaged in benchmark experiments by discussing activities of the International Criticality Safety Benchmark Evaluation Project (ICSBEP) and International Reactor Physics Experiment Evaluation Project (IRPhEP).
- Workshop 3: The Trouble With Justification-  
Will involve finding answers to the questions:  
How does one justify the choices we make in the industry?  
What does this imply for the mandate of the nuclear scientist, engineer or manager?
- Workshop 4: Media Training-  
Allows participants to learn what, why and how human beings perceive risks and what role the participant can play with managing these perceptions, then have the opportunity to role-play public debate stakeholders such as members of the public, regulators, investors, technical experts and the media.
- Workshop 5: Knowledge Transfer-  
The Power of Storytelling provides young professionals a place to learn how to solicit information from more experienced professionals in a manner that is non-confrontational.
- Workshop 6: Small Nuclear Power Reactors-  
Where participants will gain a general knowledge on how to deal with problems facing small modular reactors.
- Workshop 7: Working With Radiological Samples-  
Will assist participants discuss and proliferate best practices and techniques for working with radiological samples in a laboratory and hot cell setting.
- Workshop 8: Is Nuclear Energy Sustainable?-  
Is a workshop where participants will learn different ways to generate and efficiently use nuclear and non-nuclear energy from the viewpoint of environmental conservation.
- Workshop 9: Nuclear Power in a Diversified Energy Portfolio is where the participants will play a team game with fixed resources assigned to each country considering factors such as carbon, funding, demographics, politics, cultural/societal factors, etc.

### Workshop 10: How to Finance a New Project?

Participants will be introduced to the details of project finance and cash flows including how to analyze the specific financial considerations for the nuclear industry.

### Workshop 11: Fuel-Cycle Strategy-

Participants will take part in a role-playing game to learn fuel-cycle concepts and key parameters which define the global nuclear energy industry.

### Workshop 12: A Systems Engineering Approach to Conceptual Designs will have groups present their approach for taking ideas through the design process.

### Workshop 13: Takeaways From Fukushima-

Will promote discussions of lessons learned and present ideas for positive changes in the speaker's area of the industry. Experts will deliver presentations about the impacts of Fukushima on their respective segment of the nuclear industry. Participants will then discuss lessons learned and present ideas for positive change in the speaker's area of the industry

### Workshop 14: Advanced Reactor Concepts:

Highlights and Challenges will include discussion about a variety of next generation reactor designs. This workshop will be separated into three main sections: high temperature reactors (VHTR and AHTR) with process heat applications, including a general design description, process heat applications, and current progress; fast reactor and fast breeder reactor designs and challenges; and international collaborations, including opportunities, challenges, and a look to the future.

### Workshop 15: Stress Tests in Nuclear Power Plants

Assist in understanding the history and ramifications of post Fukushima Daiichi stress tests and help understand the potential consequences for commercial European power reactors

### Workshop 16: Nuclear Medicine Technology

Review of nuclear medicine around the world.

### Workshop 17: Young Generation Strategic Planning

A focus on developing a mock strategic plan that will optimize the future of nuclear science and technology.

### Workshop 18: Women Going Critical in Nuclear

Explores female leadership in the industry and will offer guidance with ways to manage their careers with their male peers.



## Charlotte IYNC PD Sessions



NAYGN will be hosting several professional development sessions with a focus on Strategic Planning, this year's IYNC theme.

### Company Strategies-

A discussion on developing strategic business plans in the energy industry.

### Nuclear Energy-

A Financial Discussion will explore some of the key financial challenges facing the nuclear industry, both present and future.

### Bridging the Gap-

Staffing Plan will deal with how the nuclear industry can ensure a steady supply of high-quality craft and knowledge workers in the face of an aging work force and new plant construction.

### Used Nuclear Fuel Management –

International Successes and Failures will feature domestic and international experts speaking on the successes and failures of used nuclear fuel management policies.

### Strategic Alliances: Key Benefits, Challenges and Considerations-

Building upon the concept of leveraging the strengths of multiple entities to create a viable and functional strategic advantage.

### Managing Competing Resource Requirements for a Successful Outage-

A discussion on how utilities and vendors across the world cope with competing resource requirements.

### Challenges to the Nuclear Supply Chain-

Explores the challenges associated with the supply chain and highlights potential solutions and thought processes derived by industry experts.

### Long-term Planning for Nuclear New Builds-

Discusses the strategic plans of utilities, vendors, and countries as they relate to the challenges of nuclear new builds.

### Personal Development Toolbox (Breakout)-

Provides tools for participants to develop themselves. These tools can be used to help identify career paths and determine what steps need to be taken to reach career goals.

### International Perspective on the Future of Nuclear-

Looking at how nuclear plant operations have been affected by the past year's events and what measures have been taken to prevent future accidents.

### Leading Outside Nuclear-

Explores how industries outside nuclear energy strategically develop leadership.

### **Tour 1 - Electric Power Research Tour**

Visit the Electric Power Research Institute's (EPRI) Charlotte offices and the University of North Carolina-Charlotte's (UNCC) brand new Energy Production and Infrastructure Center (EPIC) facility. The EPRI portion of the tour includes four of its research labs featuring Ultrasonic Phased Array Technology, Steam Generator Management with Nondestructive Evaluation, and the Welding Repair Technology Center. The UNCC EPIC facility tour includes the Power Systems Education Laboratory, the Smart Grid Laboratory, and the 28-meter-tall High-Bay Structures Laboratory, which includes nuclear fuel handling equipment and 3D shaker tables for seismic simulation.

### **Tour 2 – Westinghouse Uranium Fuel Fabrication Tour**

A tour of the Westinghouse fuel fabrication facility in Columbia, S.C. This facility is the headquarters for manufacturing operations in the USA and is the largest facility of its kind in the world. The tour will include the chemical, mechanical and emergency services facilities. Participants will learn about the conversion of UF<sub>6</sub> gas into UO<sub>2</sub> powder and then to U<sub>3</sub>O<sub>8</sub> fuel pellets. The process continues with rod loading, tube preparation, QC inspection and final assembly.

### **Tour 3 – Duke Energy's Nuclear Power Plant and Siemens' Turbine Manufacturing Tour**

A tour of either Duke Energy's McGuire or Catawba nuclear station. These facilities are of a similar two-unit Westinghouse 4-loop PWR design and are both located near Charlotte. The visit includes a trip to the plant simulator and a walkthrough of the turbine building. This also includes a tour of Siemens' Steam Turbine and Generator manufacturing facility in Charlotte. The facility offers a unique opportunity to see turbine-generators at all stages of manufacturing, assembly and testing.

### **Tour 4 – Palmetto Health Radiological Medicine and Surgery Tour**

A tour Palmetto Health's facility in Columbia, S.C., includes the Gamma Knife Department, the Radiation Oncology Department, and the Nuclear Medicine Department. The tour will begin with a presentation on the use of radiation and radioactive material in a medical setting. Participants will take a walkthrough tour of the gamma knife with experts discussing the operations of the department including:

### **Tour 5 – University of South Carolina (USC) Engineering Research Tour**

Tour the engineering research laboratories at the University of South Carolina located in Columbia, S.C. In the morning, attendees will explore the Thermal Hydraulic Laboratory, the Conditioned-based Maintenance Research Center and the Solid Oxide Fuel Cell Center. In the afternoon, the Palmetto Health Radiological Medicine and Surgery Tour group will join us for a short presentation on USC's nuclear research programs and a tour of the Nuclear Materials Laboratory.

### **Tour 6 – SCE&G's V.C. Summer Units 2 & 3 New Nuclear Construction Site Tour**

In 2009, South Carolina Electric & Gas Company (SCE&G) began preconstruction of two 1,117-megawatt Westinghouse AP1000 reactors at V.C. Summer Nuclear Station in Fairfield County, S.C. Tour participants will see firsthand the impressive scope and scale of building a new reactor, including a massive crane with a 560-foot tall boom that will make lifts at V.C. Summer weighing nearly 2,000 tons.

## NAYGN- A benefit to young professionals

Matt Minty- Bruce Power

As someone who is relatively new to nuclear energy, I am always looking to take advantage of opportunities to learn more about our company's processes, and to develop skills that are a benefit to myself. As an employee of Bruce Power, the organization encourages continued training, and management regularly provides coaching, which provides me with a number of opportunities to learn from. But, sometimes it's refreshing to sit down with peers who share some of the same day-to-day concerns as young professionals trying to make it in the industry. That is why I joined the North America Young Generation in Nuclear (NAYGN) organization.

"The Bruce Power chapter of NAYGN focuses a lot of its energy on professional development, providing different workshops, and seminars that allow members to learn and experience different areas within the industry," said Emily Johnston, Bruce Power Chapter Co-Chair. "Our goal is to help people not only develop their own skills, but to also be aware of the different fulfilling career paths within our company."

Recently, the organization held a workshop on conflict resolution. In an ideal world, the skill would never be needed, but that is rarely the case in the real world. Being able to effectively communicate and not make matters worse is a benefit to all parties involved and to the organization. Another workshop which was held last year, was a Lean workshop that taught participants how to think critically about changes that can maximize job performance. The workshop not only taught it's participants about the Lean process, it also highlighted the importance of effectively using resources; a skill that transcends to all industries.

"As anyone who has experience in the nuclear industry can attest, there really is a wide variety of jobs in the organization, and much of the skill development can transcend into these different functions," Emily said. "That is why the organization both locally and internationally puts an emphasis on professional development."

Its common knowledge that everybody knows a guy, who knows a guy and that in short, is networking. In the role of communications, tracking down information quickly is key, and having a network of folks who help to put me into contact with the right resource in a timely manner is a practice I use daily. I see NA-YGN as an opportunity to not just meet other peers who I may be working with for the foreseeable future, but it's also a great opportunity to meet peers from across Canada and potentially internationally. Having experienced a recent WANO Peer review at Bruce Power's Bruce B station, I can certainly attest to the importance of industry benchmarking and communication.

There is a number of reasons why I joined NA-YGN, and as I become more involved I am certain that list will grow.





# REGIONAL REPORTS

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## **Atlantic (Regional Lead Bobby Ashworth, [atlantic@na-ygn.org](mailto:atlantic@na-ygn.org))**

The 2012 Atlantic Regional Event will be held Friday June 22<sup>nd</sup> through Saturday June 23<sup>rd</sup> at the Bechtel Corporate Office in Frederick, MD. For more information and to register, please visit <https://sites.google.com/site/atlanticnaygn/>. The Atlantic Regional event is open to all NA-YGN. The Atlantic Region welcomes the Transnuclear chapter Columbia, MD. They recently kicked off and are quickly gaining momentum.

The Atlantic Regional Lead has been elected to the NA-YGN national Core as the incoming PD Chair so the position is open to any NA-YGN member in the Region looking to take a more active role the organization. Please contact [usa@na-ygn.org](mailto:usa@na-ygn.org) for more information on the position.

## **Carolinas (Regional Lead Ryan Boyle, [carolinas@na-ygn.org](mailto:carolinas@na-ygn.org))**

Chapters in the Carolinas Region are hard at work putting the finishing touches on the logistics and planning for the upcoming International Youth Nuclear Congress (IYNC). IYNC2012 will be held in Charlotte, NC from August 5 to 10.

## **Southeast (Regional Lead Jessica Wheelock, [southeast@na-ygn.org](mailto:southeast@na-ygn.org))**

Chapters in the Southeast were busy across the board doing plant tours and community outreach events related to national nuclear science week:

Bellefonte TVA hosted a few plant tours and held two public information sessions. Southern Nuclear Corporate held an ice cream recruiting session, had an article written in Southern Nuclear News and held quarterly breakfasts with their executive sponsors. South Texas Project spoke at local high schools promoted nuclear science and technology, hosted a plant tour and developed a knowledge bowl to raise money for illiteracy.

The Southeast Region also welcomes our newest NA-YGN chapter, Vogtle 3&4! Vogtle 3&4 is a combined chapter, composed of young professionals from Shaw, Westinghouse, and Southern Company.

## **Midwest (Regional Lead Terry Groth, [midwest@na-ygn.org](mailto:midwest@na-ygn.org))**

Chapters in the Midwest were busy with various events such as lunch and learns, plant tours and community outreach events. Everyone is looking forward to the activities that 2012 has in store including the PD conference in August.

## **Northeast (Regional Lead Elizabeth Haupin, [northeast@na-ygn.org](mailto:northeast@na-ygn.org))**

Our Northeast Regional Lead has served in her position for over 2 years and has done an incredible job throughout her term. With her term coming to a close, the position is open to any NA-YGN member in the Region looking to take a more active role within the organization. Please contact [usa@na-ygn.org](mailto:usa@na-ygn.org) for more information on the position.

# REGIONAL REPORTS-CONTINUED

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## **West (Regional Lead Jessica Joyner, [west@na-ygn.org](mailto:west@na-ygn.org))**

Chapters in the West were busy with various events such as lunch and learns, plant tours and community outreach events. They have also seen several chapter leadership changes over the past quarter.

## **Canada (Regional Lead Sunny Mustafa, [canada@na-ygn.org](mailto:canada@na-ygn.org))**

The Cameco chapter has been busy preparing for the upcoming professional development workshop at the Canadian Nuclear Society (CNS) Society conference on June 10 in Saskatoon, Saskatchewan. Registration for this event is free so make sure to e-mail [na-ygn@cameco.com](mailto:na-ygn@cameco.com) to pre-register! The Bruce chapter held a conflict resolution and negotiating skills workshop that provide tips on how to work across various departments within an organization. The Bruce chapter has a couple of upcoming events including hosting a station tour for members who don't normally access the plant as well as a community event where they will complete maintenance to a local trail system. The Chalk River chapter continues to grow now that they've completed their one year anniversary as a chapter. They are busy planning technical seminars for summer students who will soon be joining their company.



# EVENTS

**Canadian NA-YGN Professional Development Seminar Virtual**

Saskatoon, SK- Canada

June 10

**NA-YGN's Mid-Atlantic Regional Event, "It's a Small World"**

Bechtel Power's Headquarters, Frederick, MD

June 22-23

**Charlotte IYNC 2012- NA-YGN Professional Development Conference**

Charlotte, NC

August 5-11



North American Young Generation in Nuclear

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# 2012 Sponsorship



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